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Subject: Report:S170480954 - SPECIFICATION MET - CMA CGM ALMAVIVA (IMO No: 9450648) - IFO80-RMD80LS

FROM
VISWA LAB

TO
CMA CGM

ATTN: MR.CHRISTOPHE LESNARD

Vessel Name : CMA CGM ALMAVIVA (IMO No: 9450648)
VLC Log No : S170480954
Place & Date Sent : HONG KONG - HONG KONG, ; 05-Apr-2017
Date Received at VL : 06-Apr-2017

CUSTOMER FURNISHED DATA:

Bunker Port & Date : NAKHODKA-RUSSIA ; 23-Mar-2017
Bunker Supplier : NNK-BUNKER
Barge : ZALIV NAKHODKA
Sample Grade : IFO80-RMD80LS
Sample Seal No : V541077 - Sealed
Bunker Quantity : 1900.000 MT
Bunker Density @15°C : 834.9 kg/m3
Bunker Viscosity @50°C : 10.4 cSt
Sulphur Content : 0.0510 %
Water Content : 0.20 %
Source of the sample : MANIFOLD
Sampling Method : DRIP

SPECIFIED PARAMETERS FOR IFO80-RMD80LS & TEST RESULTS

Parameters	Units	Test Results	Specification Limits
Density @ 15°C	kg/m3	839.2	(980.0 Max)
viscosity @50°C	cSt	10.07	(80.00 Max)
Upper Pour Point	°C	6	(30 Max)
Carbon Residue	% (mass)	0.11	(14.00 Max)
Ash	% (mass)	0.002	(0.100 Max)
Water	% (vol)	0.05	(0.50 Max)
Sulphur	% (mass)	0.033	(0.1000 Max)
Total Sediment Pot.	% (mass)	0.07	(0.10 Max)
Vanadium	ppm	< 1	(350 Max)
Al + Si	ppm	1	(80 Max)
Flash Point	°C	> 70	(60 Min)
Calcium	ppm	< 1	(30 Max)
Zinc	ppm	< 1	(15 Max)
Phosphorus	ppm	< 1	(15 Max)

ADDITIONAL PARAMETERS

Parameters	Test Results	Units

viscosity @100°C	3.4 cSt
API Gravity	37.03
Sodium	2 ppm
Aluminium	1 ppm
Silicon	< 1 ppm
Iron	8 ppm
Lead	< 1 ppm
Nickel	3 ppm
Magnesium	< 1 ppm
Potassium	< 1 ppm

CALCULATED VALUES

Parameters	Computed Val	Units
Net specific energy	43.13	MJ/kg
Gross specific energy	45.96	MJ/kg
CCAI	755	
Temperature at injection (for 13 cSt)	42	°C

CONFORMANCE:

The fuel sample tested conforms to Table 2 of ISO 8217:2005 specifications for grade IFO 80 - RMD 80LS

COMMENTS:

Due to the presence of high sediment content, we carried out the stability check on this fuel sample and found to be UNSTABLE

Density and Sulfur were confirmed by repeated analysis.

SUGGESTIONS & RECOMMENDATIONS TO SHIP OWNERS/OPERATORS/TECHNICAL STAFF

Temperature for injection viscosity of 8 cst is 58°C.
Temperature for injection viscosity of 10 cst is 50°C.
Temperature for injection viscosity of 11 cst is 47°C.
Temperature for injection viscosity of 12 cst is 44°C.
Temperature for injection viscosity of 13 cst is 42°C.
Temperature for injection viscosity of 15 cst is 37°C.
Temperature for injection viscosity of 18 cst is 32°C.
Temperature for injection viscosity of 20 cst is 29°C.

POUR POINT

Observation:

Heat and store this fuel at 10°C above the measured pour point temperature.

SEDIMENT

Observation: Sediment content is near the limit.

High sediment may plug the filters and foul heat exchangers. High sediment will overload purification system and form hard, solid deposits.

Allow sediment to settle and drain for partial reduction of sediment.

Use purifiers continuously and recirculate fuel to reduce sediment content. Adjust purifier desludge cycle.

Avoid blending onboard without expert advice.

SULFUR

Observation: This fuel has low sulfur.

High alkalinity of some cylinder oils can cause scuffing and excess wear of cylinder liners.

Make sure cylinder oil used can handle low sulfur fuel.

OVERALL QUALITY:

Engine Friendliness Number (EFN) is a unique bench-mark of fuel quality evaluated by VISWA LAB from the point of view of engine wear and tear resulting from the use of this fuel. Based on EFN, which is calculated from the analysis results listed in this report, the quality of this fuel is good.

NOTE: The conformance of this fuel to the contracted specifications may have no relationship to the evaluation of this fuel based on EFN.

Questions?

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REPORT PREPARED AND APPROVED BY VISWA LAB TECHNICAL DEPARTMENT.

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